

## RUIZ AS AN ETHNOPHARMACOLOGIST IN PERU AND CHILE

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One of the regrettable situations in modern botanical research is the frequent lack of interest on the part of systematists and floristic specialists in native uses of plants. This neglect, sometimes even disdain, of indigenous knowledge and utilization of plants appears to be on the increase at a time when much of the world's native lore hovers on the verge of extinction.

Field botanists of periods past usually gave more attention to the relationship of peoples in primitive societies to their ambient vegetation. Yet even these earlier investigators were often so engrossed in the study of the general flora that they passed up opportunities of outstanding potentialities in tapping native understanding of the properties of plants.

Don Hipólito Ruiz, the Spanish botanist who directed a plant collecting expedition to Peru and Chile from 1777 to 1788, represents a notable exception to the rule. Ruiz is commonly regarded — and quite correctly so — as a systematic and floristic botanist, yet his writings indicate that he should be considered also as a major ethnobotanist of his period.

Ruiz was deeply interested in the uses of plants and in classification of economic plants. He devoted special attention to *Cinchona*, source of quinine, and wrote extensively on this genus. He published monographic studies on specific native medicinal plants. Indigenous use of plants is often noted in his descriptions of new species. The various published works of Ruiz and his colleague, Don José Pavón, contain many references to native uses of the plants of Peru and Chile. This is true especially of their *Systema Vegetabilium Florae Peruvianae et Chilesis* (1798) and their *Flora Peruviana et Chilensis* (1798–1802).

It is, however, in Ruiz' *Relación Histórica del Viage que Hizo a los Reynos del Perú y Chile el Botánico Hipólito Ruiz en el Año de 1777 hasta el de 1788 ...*, a kind of diary, that one finds the

greatest wealth of ethnobotanical data. With the exception of an ethnobotanical index in the Jaramillo Spanish edition of the *Relación* (see below), these original notes apparently have not hitherto been gathered together for publication.

In 1940, the Field Museum of Natural History published an English translation of the Spanish edition of Ruiz' *Relación* published by Padre Agustín Jesús Barreiro in 1931. This edition represents only a part of the *Relación*.

During the Second World War, whilst he was serving as Colombian Ambassador to the Court of St. James, the late Dr. Jaime Jaramillo Arango discovered in the British Museum (Natural History) the manuscript of the entire *Relación* of Ruiz. This complete document was edited by Dr. Jaramillo and elegantly published in Spain in 1952. At the request of Dr. Jaramillo, I translated the Spanish text into English with his wife, Doña María José de Jaramillo. Our translation is now ready for publication. It is from this original and complete edition that the following notes on the ethnopharmacological uses of Peruvian and Chilean plants have been culled.

In view of the current interest in biodynamic plants, I have decided in this paper to report only those uses that depend apparently on the presence of active secondary organic chemical constituents: medicines, poisons, perfumes, dyes, etc. The *Relación* contains many other ethnobotanical references to plants valued in construction, as foods, as sources of wood, as material for clothing and for other purposes — uses obviously based on the carbohydrates, proteins and fats and oils content of the plants.

Ruiz' ethnobotanical reports should be unusually significant and important to modern students. They are the result of direct observation in the field; they were gathered by a botanist and are based on voucher specimens; they outline plant uses of two hundred years ago by natives in a relatively primitive society which has long since passed from existence.

It has seemed most useful to present the following data under the plant name used by Ruiz in his *Relación*. I have found that an appreciable number of the Latin binomials have apparently never been validly published. However, since they have all appeared in Jaramillo's Spanish edition of the *Relación* and since

some were published in Barreiro's earlier incomplete edition, they may be considered as *nomina nuda*. Amongst the names used in the *Relación*, a few are synonyms; it has been possible in some cases to indicate in brackets under the original binomial the currently accepted name.

The genera are arranged alphabetically under families. The families are enumerated in accord with the system of Engler and Prantl.

#### POLYPODIACEAE

**Polypodium Incapcocam** *nom. nud.*

(cucacuca; incapcocam; coca del Inca)

According to the Indians, the Incas used the leaf in place of real coca. In the form of a powder, it was taken instead of tobacco "to clear the head."

#### PTERIDACEAE

**Achrostichum Cuacsaro** Bert. Opusc. Sci. Bol. 1 (1817) 241, t.8.  
(cuacsaro)

The roots are sold commercially as genuine calaguala (*Polypodium* sp.), but they lack the medicinal virtues.

#### ARAUCARIACEAE

**Pinus chilensis** *nom. nud.*

[*Araucaria araucana* (Mcl.) C. Koch Dendrol. 2, ii (1873) 206.]  
(pino de Chile)

When the natives engaged in felling this tree gash themselves severely, they apply the resin of the tree to the wound. "There is no doubt that it produces the effect that they want. It is also found to be very helpful as a calmative in cases of ruptures and bruises."

#### ARACEAE

**Calla nuda** *nom. nud.*

The root is thought to have properties making it effective in the treatment of snake bites.

#### BROMELIACEAE

**Pouretia coarctata** R. et P. Fl. Peruv. 3 (1802) 34.

[*Puya chilensis* Mol. Sagg. Chil. (1782) 160, 351.]  
(cardón; puya)

An excellent extract for setting fractures is got from the raceme or long stalk of the inflorescence of this plant. The nectar of the flowers is fragrant and tasty; when applied to an aching ear, it is said to lessen the pain and to cure the ailment.

**Tillandsia usneoides** L. Sp. Pl., Ed. 2 (1762) 411.  
(salvagina, saccropa, millmahina, cotataura)

In warm baths, this plant is valued as an antinervine to rebuild physical strength and to aid in inducing sleep. The Indians fill mattresses with it to repel flies. It is likewise appreciably valued by those with back-ache and kidney trouble. Crushed and mixed with fat, it is applied to treat hemorrhoids.

#### SMILACACEAE

**Smilax China** L. Sp. Pl. (1753) 1029.  
(purampsii)

An infusion of the roots is frequently used by the Indians to relieve rheumatic pains and as an excellent sudorific. Ruiz published more extensively on native uses of this plant in his *Memoria sobre la Raiz de China*, Real Academia Médica de Madrid, vol. 1 (1797).

#### AMARYLLIDACEAE

**Agave americana** L. Sp. Pl. (1753) 323.  
(pita; ancaschampascera; maguey mexicana)

The Indians employ an infusion and decoction of the roots to cure rheumatic and venereal pains. It is drunk in large quantities. The leaves yield a “honey” or extract which is believed to be excellent for cleansing and healing ulcers. The leaves are roasted, and the juice is squeezed out whilst they are still hot. The extract is then boiled down to the thickness of soft honey, in which state it is applied with no other agent to cure not only ulcers in man but also sores on beasts of burden and the wounds which they often suffer on the head and feet.

**Alstroemia Ligtu** L. Sp. Pl., Ed. 2 (1762) 462.  
(liutu)

The Chileans extract a white starch from the roots which provides a soft food for babies and the elderly and those suffering from stomach ailments. This flour is very easily digested.

**Polianthes tuberosa** L. Sp. Pl. (1753) 316.  
(Cited in the *Relación* as *Polyanthes tuberosa*.)  
(margaritas blancas; vara de Jesse)

Emollient plasters are prepared from the roots.

#### IRIDACEAE

**Sisyrinchium anceps** Cav. Diss. 6 (1788) 345, t.190, fig. 2.

**S. Ocsapurga** *nom. nud.*

(palma-palma; pajapurgante)

A decoction of the roots is laxative. A slight tasting of these roots leaves a pungency and acrimony in the mouth for more than six hours and may cause much discomfort. "I judge from this that its purgative properties are too drastic and ought to be used more cautiously than the Indians are wont to do."

**Sisyrinchium luteum** Bert. ex Steud. Nom., Ed. 2 (1841) 596.

[*Sisyrinchium tinctorium* HBK. Nov. Gen. et Sp. 1 (1816) 324.]

**Sisyrinchium convolutum** Nocca Pl. Select. Ticin. (1800) 128, t.1.

**Sisyrinchium purgans** *nom. nud.*

(ossapurga; pajapurgante)

The natives employ the roots as a purgative, controlling the strong laxative effects with draughts of cold water. Since it is a potent laxative, it must be used with caution.

**Sisyrinchium multiflorum** Steud. Nom., Ed. 2, 2. (1841) 596.

[*Orthrosanthus multiflorus* (Steud.) Sweet Fl. Austr. (1827-1828) t.11.]

(tekel; huilmo blanco)

The Chilean natives use this plant as a strong laxative, making an infusion of the roots in water.

**Sisyrinchium quadriflorum** *nom. nud.*

(huilmo)

A decoction or warm infusion of the roots is taken as a purgative and to expel "venereal humours."

#### ZINGIBERACEAE

**Amomum racemosum** R. et. P. Fl. Peruv. 1(1798) 2.

[*Renealmia Ruiziana* Horan. Prod. Scitam. (1862) 33.]

(achira de monte)

The seeds are “not less oily and useful for medicinal purposes than the seeds of *Amomum thyrsoideum*, which is plentiful...”

#### PIPERACEAE

**Piper Carpunya** R. et P. Fl. Peruv. 1 (1798) 37, t. 63.

(carpunya)

The aromatic leaves become more fragrant when dried. The natives drink one or two cups of an infusion as an aid to digestion. They prefer it to real tea.

**Piper dichotomum** R. et P. Fl. Peruv. 1 (1798) 35, t. 60.

(Cited in the Relación as *Piper dichotoma*)

The leaves of this species can be used as a substitute for *P. Carpunya*, for they are almost equally as fragrant and tasty.

#### CHLORANTHACEAE

**Tafalla glauca** R. et P. Syst. (1798) 271.

[*Hedyosmum glaucum* (R. et P.) Cordem. in Adansonia 3 (1863) 303.]

(aitacupi)

These bushes give off tears of resin, very similar in shape, colour, and smell to mastic, for which reason the plant is frequently called almaciga. The resin is used to alleviate headaches, applied to the temples as a plaster.

**Tafalla triflora** *nom. nud.*

(aitacupi)

The resin, called almaciga (“mastic”), is collected in some regions of Peru and used as a comforting plaster.

#### JUGLANDACEAE

**Juglans nigra** L. Sp. Pl. (1753) 997.

(nogal del país)

“Take equal parts of the native walnut, soot and colophony and boil them together with wool previously soaked in alum solution. The resulting dye is resin-colour.”

#### MYRICACEAE

**Myrica stornatatoria** *nom. nud.*

(ssayre; tuppassayre; laurel)

The entire shrub is useful for dyeing leather black. The powdered bark causes repeated sneezing and is extensively used to clear the head and to relieve headaches.

#### BETULACEAE

**Betula nigra** L. Sp. Pl. (1753) 982.

(ramra)

The bark soaked in urine gives colour to sole leather; it can also dye cottons and woollens a cinnamon hue. The bark serves also as a tannin. Pounded up and mixed with lard, the leaves are applied as a poultice to cleanse and heal ulcers. Without lard, they are valued in treating inflammations. When applied to fresh wounds, they staunch the flow of blood.

#### FAGACEAE

**Fagus oblongifolia** *nom. nud.*

(pellín)

Chileans employ the bark to dye woollens a dark purple.

**Fagus Pellin** *nom. nud.*

(pellín)

Crushed up and mixed with lime or bran, the bark is employed as a tanning material, dyeing sole leather a red colour.

#### URTICACEAE

**Urtica spiralis** Domb. ex Wedd. in Ann. ser. 3, 18 (1852) 232.

A gum resembling gum arabic weeps from the wounds inflicted on the branches. The yield is small.

#### PROTEACEAE

**Embothrium dentatum** R. et P. Fl. Peruv. 1 (1798) 62, t. 94.

(raral)

The bark and leaves are the source of a black dye.

**Embothrium emarginatum** R. et P. Fl. Peruv. 1 (1798) 62.

[*Embothrium grandiflorum* Lam. Encycl. 2 (1786) 354.] t. 95.

(catas; machinparrani)

The leaves are crushed and applied to contusions by the Indians; powdered, they are said to dry up ulcers and help the growth of new flesh.

**Embothrium monospermum** R. et P. Fl. Peruv. 1 (1798) 63, t. 98.

[*Roupala monosperma* (R. et P.) I. M. Johnston in Contrib. Gray Herb. 73 (1924) 42.]

**Embothrium pinnatum** R. et P. Fl. Peruv. 1 (1798) 63, t. 97.  
[*Roupala pinnata* (R. et P.) Diels ex Macbride in Field Mus.  
Publ. Bot. 13, pt. 2, no. 2 (1937) 374.]  
(catas; picahuai)

According to native belief, a powder prepared from the leaves of these two species, when applied to ulcers, hastens healing and the growth of clean new flesh.

#### LORANTHACEAE

**Loranthus semicalyculatus** *nom. nud.*

**Loranthus verticillatus** R. et P. Fl. Peruv. 3 (1802) 47.

[*Phrygilanthus verticillatus* (R. et P.) Eichl. in Martius Fl. Bras.  
5, pt. 2 (1868) 47.]

(ictricgo; michtrin; quintral)

Both species yield a black dye.

#### ARISTOLOCHIACEAE

**Aristolochia fragrans** *nom. nud.*

[This name may represent the same species-concept as *Aristolochia fragrantissima* Ruiz in Mem. Virt. Bejuco Estrella (1805) 46.]

(bejuco de la estrella; contrayerba)

The Cholone Indians use the root to cure rheumatic and venereal pains, drinking a decoction of it at night. "A few hours after taking such a draught, the patient breaks out in a profuse sweat that continues for three days. On the fourth day, he is fully recovered and can leave his sick bed without any ill effects to hinder his work. I have used this root in Peru for killing toothache, upon the recommendation of Father Francisco González Laguna. One might expect that in time this root will find an important use in medicine, for its aroma and taste bespeak excellent properties, making it valuable for a number of therapeutic applications, surpassing those of *Serpentaria virginiana*."

#### POLYGONACEAE

**Coccoloba carinata** Ruiz ex Meissn. in DC. Prodr. 14 (1856) 150.

[*Muehlenbeckia tamnifolia* (HBK.) Meissn. Comm. 2 (1840) 227.]

**Coccoloba nitida** HBK. Nov. Gen. et Sp. 2 (1817) 176.

(muyaca)



The Indians consider this shrub to be an excellent diuretic for ailments of the urinary tract.

**Rumex Patentia** L. Sp. Pl. (1753) 333.  
(hualtata)

The purplish leaves are used in Chile as a suppurative agent, whereas the green leaves are employed as a resolutive. Both kinds of leaves, applied to the back, "reduce the heat of the blood."

#### CHENOPODIACEAE

**Chenopodium amarum** *nom. nud.*

**C. dulce** *nom. nud.*

(payco)

A warm infusion is considered in Chile to be an excellent digestive and is used in place of tea.

#### AMARANTHACEAE

**Achyranthes obovata** Pav. ex Moq. in DC. Prodr. 13, pt. 2. (1849) 359.

[*Alternanthera Achyrantha* R. Br. Prodr. 1 (1810) 417.]

**Achyranthes rigida** *nom. nud.*

(yerba del moro hembra and yerba del moro macho, respectively)

Both specimens are employed in decoction to lessen bleeding. Crushed with salt, they are applied to lessen bloody hemorrhages and heal ulcers; the poultice is changed every 24 hours. The natives heal bruises and cuts of the feet caused by the calyces of these species that enter as splinters when shoes are not worn.

**Celosia conferta** *nom. nud.*

(yerba de la sangre)

The juice and a decoction of its tuberous root are considered to be hemostatic — whence the vernacular name.

#### PORTULACCACEAE

**Talinum monandrum** R. et P. Syst. (1798) 118.

**Talinum nitidum** R. et P. Syst. (1798) 117.

**Talinum umbellatum** R. et P. Syst. (1798) 117.

(yerba de la mistela)

The flowers impart a crimson colour to mistela (a liquid made of urine, sugar and cinnamon). The country women tint their

cheeks with the juice of this herb, and it gives them a “bright and attractive blush.”

#### NYCTAGINACEAE

**Boerhaavia scandens** L. Sp. Pl. (1753) 3.

(yerba de la purgación)

The infusion or decoction is thought to be effective against gonorrhoea.

**Neea verticillata** R. et P. Syst. (1798) 90.

The fruits are used by Indians to stain feet, hands and face purple; they are also a source of a dye for cotton.

#### PHYTOLACCACEAE

**Phytolacca icosandra** L. Sp. Pl. (1753) 631.

The Indian women value the ripe fruits to make a dye for cotton.

#### AIZOACEAE

**Sesuvium Portulacastrum** L. Syst. Ed. 10 (1759) 1058.

(litho)

In Ica and other parts of Peru, the aborigines collect this species of glasswort for use in manufacturing glass and soap.

#### BASELLACEAE

**Chenopodium tuberosum** *nom. nud.*

[*Ullucus tuberosus* Lozano in Caldas Sem. Nueva Granada (1809) 185.]

(ulluco)

The roots are a common carbohydrate food. An infusion of the whole plant is taken as an expectorant and aid in childbirth.

#### BERBERIDACEAE

**Berberis lutea** R. et P. Fl. Peruv. 3 (1802) 51, t. 280.

(ccarhuascassa; palo amarillo)

Indian women utilize the wood of this species to dye their cottons and coarse textiles a beautiful and fast canary yellow.

**Berberis mucronata** *nom. nud.*

**Berberis tortuosa** Domb. ex DC. Syst. 2 (1821) 11, in *syn.*

[*B. flexuosa* R. et P. Fl. Peruv. 3 (1802) 52, t. 281.]

The wood yields an excellent yellow dye.

#### MONIMIACEAE

**Pavonia sempervirens** R. et P. Syst. (1798) 253.

[*Laurelia sempervirens* (R. et P.) Tul. in Arch. Mus. Paris 8 (1855–56) 416.]

(laurel de Chile)

Warm baths of this plant are believed to “strengthen the nerves” and, because of this virtue, the plant is used in treating convulsions, paralysis and rheumatic spasms. When drunk at each meal time, an infusion of the leaves is said to calm rheumatic pains.

#### GOMORTEGACEAE

**Gomortega nitida** R. et P. Syst. (1798) 108.

[*Gomortega Keule* (Mol.) I. M. Johnston in Contrib. Gray Herb., n.s. no. 70 (1924) 92.]

(keule)

The leaves have an acid–astringent taste and stick to the teeth when they are chewed because of their resin content. If crushed between the fingers, they give off a fragrance suggestive of rosemary and spirits of turpentine; judging from its aromatic qualities, we might infer that the plant possesses healing properties. “The beautiful fruits are as large as small hen’s eggs and are lustrous, of a yellow colour that invites one to eat them. When eaten in excess, however, they bring on headaches.”

#### LAURACEAE

**Laurus fragrans** Salisb. Prodr. (1796) 344.

[*Lindera Bensoin* Meissn. in DC. Prodr. 15 (1864) 244.]

(mucamuca)

The seeds are aromatic and have stomachic properties.

**Laurus Peumo** Domb. ex Lam. Encycl. 3 (1789) 455.

(peumo)

The bark has astringent properties and yields an orange–coloured dye for leathers. The Chileans assert that the fruits possess virtues valuable in treating dropsy.

**Ruizia fragrans** R. et P. Syst. (1798) 267.

[*Peumus Boldus* Mol. Sagg. Chil. (1782) 185.]

(boldu; boldo)

Chileans employ the crushed leaves extensively “to strengthen the stomach” and relieve pains. They cure earaches with the sap of the leaves extracted with water. To treat running sores and colds in the head, they apply the leaves, half roasted, bruised and sprayed with wine. Warm baths prepared with the leaves are taken as unsurpassed cures for rheumatism and dropsy. An infusion of the leaves can be taken daily in place of tea.

#### PAPAVERACEAE

**Bocconia frutescens** L. Sp. Pl. (1753) 505.

(palo amarillo)

This vernacular name refers to the colour of the sap, which can be employed to dye cottons, woollens and coarse hempen cloth yellow.

#### CRUCIFERAE

**Lepidium foetidum** *nom. nud.*

[This name may refer to the species-concept *Coronopus didymus* (L.) Smith Fl. Brit. 2 (1800–1804) 691.]

(chichiccará; huanuccara; mastuerzo silvestre)

Frequently, this herb is used to cure “valley sickness.” The plant is rubbed vigorously in water which is then administered as an enema. Crushed and slightly warm, it is poulticed to cleanse and cure cancerous ulcers. Crushed and mixed with lard, it is applied to the abdomen to relieve swelling brought on by retarded menstruation.

**Sisymbrium Sophia** Barnh. in C. Gay Fl. Chil. 1 (1845) 127.

(Cited in the *Relación* as *Sisymbrium sophiae*.)

(ucuspatallan)

In the Provinces of Tarma and Huamalíes, this plant is used as a diuretic. Some believe it to be a stronger diuretic than it is, “for they prepare the infusion with the dried plant, in which state it lacks ammonium and is, therefore, nearly inert.”

#### CRASSULACEAE

**Sedum Ccallu** *nom. nud.*

(ccallu)

The juice is used to dissolve films and the beginnings of cataracts of the eyes.

## SAXIFRAGACEAE

**Stereoxylon resinosum** R. et P. Prodr. (1794) 14, t. 6.  
[*Escallonia resinosa* (R. et P.) Pers. Syn. 1 (1805) 235.]  
(tiri encarnado; puca tiri; chachacoma)

The women esteem the tips of the branchlets to prepare a purple and red dye.

## ROSACEAE

**Acaena anserinaefolia** *nom. nud.*

This plant is used to treat gonorrhoea, the infusion or decoction being drunk in the morning and afternoon.

**Acaena pinnatifida** R. et P. Syst. (1798) 413.

This plant is reputedly an excellent diuretic and refrigerant.

**Geum urbanum** L. Sp. Pl. (1753) 501.  
(quellgón; canelilla)

The epithet canelilla (“little cinnamon”) alludes to the aroma of the roots, which are used in infusion or decoction as an aperitive and resolutive. Some people keep pieces of the root in the mouth to counteract the unpleasant smell often engendered by decaying teeth.

**Kageneckia lanceolata** R. et P. Syst. (1798) 290.

The bark and leaves are bitter and are employed in infusion for treating fevers.

**Kageneckia oblonga** R. et P. Syst. (1798) 289.  
(guayo colorado)

The bark is employed in tanning skins, and the natives in Chile value the seeds as a purgative.

**Nespilus uniflora** C. Kock in Wochenschr. 5 (1862) 383.

An infusion is considered a cure for the sickness known as verrugas (Carrion’s disease).

**Smegmadermas emarginata** R. et P. Syst. (1798) 288.  
[*Quillaja Saponaria* Mol. Sagg. Chile (1802) 175, 354.]  
(quilley)

A decoction of the bark is applied in clysters for treating hysterics.

LEGUMINOSAE

**Astragalus canescens** Bunge, Astrag. 2 (1879) 174.

(garbancillo)

When eaten in excess, this legume causes severe pains and constant trembling in animals. It may lead to death.

**Caesalpinia Tara** R. et P. Fl. Peruv. 4 (1802) t. 374.

[*Caesalpinia spinosa* (Mol.) Kuntze Rev. Gen. 3, pt. 2 (1898) 54.]

(tara)

Sticks of tara are split up finely; urine is poured over the pieces of wood, which are then set out in the sun. Urine is repeatedly poured over them, until they are well soaked. After airing, the sticks are boiled in water, together with red tiri (*Stereoxylon resinosum*) and woollen or cotton fabrics. The dye is a purplish red.

The dried fruit of tara and a bit of soot are boiled together with woollens soaked in iron sulphate or vitriol without acid. The fabric will be dyed a beautiful clove-colour.

**Cassia mimosoides** L. Sp. Pl. (1753) 379.

(huaranhillo)

[This vernacular name applies to *Cassia glandulosa* L. Sp. Pl. (1753) 542.]

**Cassia Tora** L. Sp. Pl. (1753) 376.

An infusion of the leaves of both species acts as a purgative.

**Cassia procera** *nom. nud.*

(cañafistula)

The bittersweet pulp of the pod is taken as a laxative by Peruvian Indians.

**Cassia reflexa** Salisb. Prodr. (1796) 326.

(mayo; mayu)

The bark yields a yellow dyestuff.

**Cassia setacea** *nom. nud.*

**Cassia undecimjuga** *nom. nud.*

(pachapacte; hatumpacte)

The natives use the leaves in infusion as a purgative.

**Indigofera Anil** L. Mant. 2 (1771) 272.

(añil)

Indigo for ink and paint is extracted from this plant in Peru.

**Mimosa sp.**

(espina)

In Chile, the rind of the pod is used to make a black ink.

**Mimosa punctata** L. Syst. Ed. 10 (1759) 1311.

(tapateputilla)

A powder made of the leaves is esteemed in Lurin as the best remedy for healing ulcers.

**Myroxylon peruiferum** L. f. Suppl. (1781) 233.

(quinoquino)

A pomade of the fruits prepared in powder form together with the bark mixed with tallow or resins is applied as a poultice to reduce headaches. The crushed fresh leaves are said to heal new wounds; the same properties are claimed for the resin and the bark, for both are renowned as admirable balsamic and vulnerary agents. An oil called quinaquina is prepared from the fruits. A balm, reputedly very effective for ulcers of the chest, is prepared from four ounces of the fruit bruised and infused in a pint of wine for twenty-four hours; this is then cooked over a slow heat with a pound and a half of ordinary oil, until it is dry. Then one pound of turpentine and one ounce and a half of incense and an equal amount of myrrh are added. This preparation is said to agglutinate and heal open sores.

**Negretia elliptica** R. et P. Syst. (1798) 176.

[*Mucuna elliptica* (R. et P.) DC. Prodr. 2 (1825) 405.]

**Negretia inflexa** R. et P. Syst. (1798) 176.

[*Mucuna inflexa* (R. et P.) DC. Prodr. 2 (1825) 405.]

(llamapanauí)

The seeds are believed to be antidotal to the stings of small insects. They are taken in the form of a powder in two doses, and the powder is dusted over the bites of the toxic animal.

**Negretia spinosa** *nom. nud.*

[This name refers probably to the species-concept *Mucuna elliptica* (R. et P.) DC. Prodr. 2 (1825) 405.]

(llamapanauí)

The Indians consider the seed an effective antidote for snake bites and insect stings. It is powdered and applied directly to the bite, and about one drachma of the seed swollen in water is taken

internally. Some take half a scruple of the prickles or bristles in a cup of chocolate, milk or sugared water as an anthelmintic.

**Psoralea capitata** L. f. Suppl. (1781) 339.

(yerba de San Agustín; yerba de la Trinidad, yerba del Carnera, huallicaya)

The natives often utilize the leaves to cleanse ulcers of pus and to aid in regeneration of flesh; later, leaves of the same plant are applied in powdered form to hasten healing.

#### KRAMERIACEAE

**Krameria triandra** R. et P. Fl. Peruv. 4 (1803) 61, t. 93.

(ratanhia; pumacuchu; mapato)

The roots have excellent styptic properties that can staunch the flow of blood, according to native belief. The dose for a decoction is half an ounce of dry root or one drachma of its water extract weakened with two or three ounces of ordinary water. This root is good for “cleansing and strengthening the teeth.” According to Ruiz, the root “surpasses in efficiency all other herbs which are employed at the present time to staunch the flow of blood and lacks the evil after-effects that other astringents cause. Experiments with more than one thousand persons who have taken the extract under the care of the best physicians bear out the statement.”

Ruiz published more extensively on the styptic uses of this plant in his *Memoria sobre la Ratanhia* in *Memoirs of the Medical Academy of Madrid*, vol. 1 (1797).

#### OXALIDACEAE

**Oxalis Ockas** *nom. nud.*

[*Oxalis tuberosa* Mol. Sagg. Chile 3 (1782) 109.]

(chullco-chullco; occas)

The stems and leaves are called chullco (“sorrel”) and are said to be used “as a cooling agent in high fevers and typhoid,” in treating painful urination, choking, sore throat and jaundice. The roots are crushed and applied as a cataplasm to reduce the swelling of goitre and mumps.

#### TROPAEOLACEAE

**Tropaeolum majus** L. Sp. Pl. (1753) 345.

(masteurzo; capuchinas)



The Peruvian natives frequently employ this plant to treat scurvy and mouth sores.

#### LINACEAE

**Linum confertum** *nom. nud.*

(merulaguén)

An infusion and decoction are frequently prescribed in treating catarrhal coughs and lung ailments. When crushed and mixed with urine, the plant can be applied as a poultice to dissolve various kinds of tumours.

#### MELIACEAE

**Guarea purpurea** C. DC. in DC. Monogr. Phan. 1 (1878) 564.

(cheñor)

Indian women in Peru dye their cotton goods and baize a purplish hue with this plant.

#### MALPIGHIACEAE

**Malpighia nitida** Jacq. Enum. (1760) 21.

[*Bunchosia nitida* (Jacq.) Juss. in Ann. Mus. Par. 18 (1811) 481.]

(ciruela del pais; ciruela del fraile)

The seeds, in flavour rather like fresh almonds, have purgative properties and bring on nausea.

#### POLYGALACEAE

**Polygala** aff. **discolor** *nom. nud.*

(mascca)

Indian women use the bark of the root to prepare a wash to cleanse and stimulate hair. Intensely bitter, the bark forms a lather like that of soap.

**Polygala vulgaris** L. Sp. Pl. (1753) 702.

(clinclín)

In Chile, a warm infusion of this plant is valued as an excellent diuretic.

**Monnina polystachya** R. et P. Syst. (1798) 171.

According to Ruiz, the bark has been shown to be effective in treating dysentery and asthmatic ailments. Three grains of its powder are taken in the morning and evening at the beginning of the treatment, and the dose continues to increase for several months.

**Monnina salicifolia** R. et P. Syst. (1798) 172.

(hacchiquies; pahuata–huinac, which means “growing at night”)

Women prepare from this plant a hair wash and believe that it stimulates exuberant growth of the hair. The saponaceous constituents free the scalp from dandruff and the hair from oils. The roots are very bitter and have a much higher saponine content than the rest of the plant. “Excellent medicinal virtues, especially for treating dysenteries, reside in these roots, which have virtues not inferior to those of simarouba or *Quassia divica* or even those of *Quassia Amara*.”

#### EUPHORBIACEAE

**Croton ciliatum** *nom. nud.*

(huanarpo macho; higos del duende)

The natives assert that an infusion of the root of this milky plant is a strong aphrodisiac. They also claim that an infusion of the huanarpo hembra is its antidote. There is no difference between these two plants, except that the former has red flowers, the latter white ones.

**Croton gummiferus** A. Cunn. ex Pl. in Hooker, Lond. Journ. Bot. 4 (1845) 473.

(Cited in the *Relación* as *Croton gummiferum*.)

(sangre de drago)

“The taste, colour and astringency of the gum–resin are such as would recommend its use in medicine.”

**Jatropha aphrodisiaca** *nom. nud.*

[This plant is probably *Jatropha ciliata* Muell.–Arg. in *Linnaea* 34 (1865) 209.]

(simayuca)

The Indians believe that the root has aphrodisiac properties.

**Euphorbia Peplus** L. Sp. Pl. (1753) 455.

[Cited in the *Relación* as “*Euphorbia Peplis?* Linn.?”]

(yerba de la golondrina)

The latex is used in the belief that it cures cataracts of the eye.

**Euphorbia tuberosa** L. Sp. Pl. (1753) 456.

[The plant is probably *Euphorbia Huanchahana* (Kl. et Gke.) Boiss. in DC. Prodr. 15, pt. 2 (1862) 103.]

(huachanccana)

The Indians take the root to Lima to sell as a purgative, but it must be used cautiously because of its drastic properties. Although the effects can be strong, the natives moderate its action simply by drinking one glass of cold water.

**Euphorbia tricuspidata** Lapeyr. Hist. Abr. Pl. Pyr. 1 (1818) 271.

**Euphorbia portulacoides** L. Sp. Pl. (1753) 456.

[*Euphorbia chilensis* Gay Fl. Chile 5 (1849) 335.]

(pichoa)

The Chilean natives take an infusion as a laxative. The drastic purging can be held in check by drinking cold water.

**Ricinus communis** L. Sp. Pl. (1753) 1007.

**Ricinus ruber** *nom. nud.*

(higuerella del pais; higuerilla mexicana, respectively)

The natives employ these plants as a superative for external swellings.

**Sapium fragrans** *nom. nud.*

(collihuay)

When the roots are burned, they give off a fragrance which is pleasant but which causes headaches. The milky latex is so caustic that it has caused woodcutters the loss of their sight.

#### CORIARIACEAE

**Coriaria nervosa** *nom. nud.*

[*C. ruscifolia* L. Sp. Pl. (1753) 1037.]

(deu)

The whole plant serves as a good tanning material.

**Coriaria pinnata** *nom. nud.*

Indian women utilize the fruits to dye woollens and cottons a bright purple.

#### ANACARDIACEAE

**Rhus atrum** *nom. nud.*

The sap in the bark and stems yields an ink as lustrous and black as printer's ink. It is weak in colour when freshly written but becomes blacker upon drying.

**Schinus aurantiadora** Ruiz ex Endl. in DC. Monogr. Phan. 4 (1883) 326.

**Schinus oblongifolia** *nom. nud.*

(mayco)

The shade of both species causes a stinging and painful rash that develops into infected sores accompanied by fevers. The Indians maintain that the shade of the latter species is more harmful than that of the former.

**Schinus dependens** Orteg. Hort. matr. Dec. (1798) 102.  
(huighan; huighnan)

The trunk exudes a resin which, applied to the temples and behind the ears, lessens toothache and pains in the chest. Chileans prepare from the fruit an excellent chicha with diuretic properties which is thought to be effective against dropsy. "Recently, three persons in Concepción have been cured of dropsy by frequent use of this chicha." Even though the drink is not agreeable, the Indians take it at all meals. Its taste and smell suggest black pepper.

**Schinus frondosus** *nom. nud.*  
(lithre; lithi)

The shade of this tree is so harmful that many people find that purulent sores are produced after they rest under the branches. These sores are accompanied by a high fever and attack especially those parts of the body which have been exposed. Smoke from the burning wood and the vapours given off when woodchoppers fell it are equally noxious.

The antidote is maytén (*Celastrus* sp.). Maize grains masticated and applied to the sores likewise act as a cure.

**Schinus Molle** L. Sp. Pl. (1753) 380.  
(molle)

One treatment for dropsy and gout consists of a bath of a salty infusion of the leaves and bark of molle. The Indians employ a fermented drink of the fruits in treating dropsy. The white, fragrant resin from molle is an excellent bone-set if applied in the form of a plaster, and it can be used to heal ulcers.

**Schinus procerus** (HBK.) March. Rev. Anacard. (1869) 164.  
(Cited in the *Relación* as *Schinus procera*)

[*Cyrtocarpa procera* HBK. Nov. Gen. et Sp. 7 (1825) 20, t. 609.]  
(molle de Chile)

When applied to the temples, the resin is said to alleviate headaches.

#### CELASTRACEAE

**Celastrus dependens** *nom. nud.*

(maytén; magthun)

This showy bush is considered a remedy for the affection produced by lithre (a species of **Schinus**) which grows in the same region as maytén. "The Divine Wisdom surely put lithre and mayten together so that the ravages of the one could be cured by the antidotal action of the other." A poultice of the crushed leaves is applied to the purulent sores caused by the shade, smoke or effluvium of lithre and, at the same time, a purgative infusion of maytén leaves is imbibed.

#### ICACINACEAE

**Villaresia mucronata** R. et P. Fl. Peruv. 3 (1802) 9, t. 231.

[*Villaresia emarginata* R. et P. Syst. (1798) 64.]

(huillipatagus)

The bark and fresh leaves have strong emetic properties and are taken in infusion to induce vomiting; in larger doses, the infusion acts as a purgative.

#### SAPINDACEAE

**Dodonaea viscosa** (L.) Jacq. Enum. (1790) 19.

(chamisa; chamana)

Crushed and applied as cataplasms on contusions, this plant has very fast and excellent healing properties, according to native informants.

#### RHAMNACEAE

**Rhamnus canescens** *nom. nud.*

**R. dependens** *nom. nud.*

(trébol; trábul)

The bark is utilized in washing and cleansing the head. It is also substituted for calaguala as a resolute and dissolutive agent in the treatment of blows.

**Rhamnus verticillatus** *nom. nud.*

(chacay)

In Chile, an infusion of the bark is valued in treating internal tumours and abscesses.

#### ELAOCARPACEAE

**Aristolelia glandulosa** R. et P. syst. (1798) 125.

[*Aristolelia Maqui* L'Herit. Stirp. Nov. (1784) 31, t. 16.]

(maque)

According to the natives, the fresh shoots, crushed and applied to the back and the area of the kidneys, lessen "excessive heat" in these parts of the body during fevers; when chewed, they cleanse and heal sores of the mouth.

#### MALVACEAE

**Urena villosa** *nom. nud.*

**Urena hamata** *nom. nud.*

(lausahacha)

Womenfolk wash their hair with the mucilaginous material extracted from these two plants with cold water. It is used to lessen dandruff, to cleanse the hair of excess oil and to stimulate growth.

#### OCHNACEAE

**Sauvagesia ciliata** *nom. nud.*

(yerba de San Martín)

The Indians employ this plant medicinally for many purposes, especially to treat fatigue and chest ailments.

**Sauvagesia subtriflora** *nom. nud.*

[This plant is probably *Sauvagesia erecta* L. Sp. Pl. (1753) 203.]

(yerba de San Martín)

The natives value a decoction in treating chest pains.

#### GUTTIFERAE

**Clusia rosea** Jacq. Enum. (1760) 34.

**Clusia trioecia** *nom. nud.*

(matapalo)

This strangler yields a resin, also called metapalo, which is highly esteemed in Peru for curing ruptures and fractures.

**Clusia radicans** Pav. ex Pl. et Tr. in Ann. Sc. Nat. ser. 4, 13 (1860) 374.

(pullapullquelpuan)

The resin is employed as a bone-set.

**Hypericum** sp.

(chinchanho)

Equal parts of yellow tiri (*Melastoma tomentosum*) and of chinchano, a bit of alum and some wine are boiled together in water with cottons and woollens until the fabric is dyed yellow.

**Hypericum corymbosum** Muhl. ex Willd. Sp. Pl. 3 (1802) 1457.  
(chinchano)

These plants provide a yellow dye for woollens and cotton goods.

**Hypericum subulatum** *nom. nud.*  
(chinchanco)

This plant is very abundant in Peru and is employed by the natives to dye woollens and cotton fabrics a beautiful yellow.

#### BIXACEAE

**Bixa muricata** *nom. nud.*  
(maxpachín)

Peruvian natives colour their foods and dye a variety of objects with the seeds, as they do also with the seeds of *Bixa Orellana*.

**Bixa Orellana** L. sp. Pl. (1753) 512.  
(achote; achiote; huantura)

The seeds are reputedly an excellent diuretic. They are used to colour spiced foods and serve also as a dyestuff.

#### LOASACEAE

**Loasa punicea** Phil. In An. Univ. Chile (1884) reimpr. 4.  
(pomaysancca)

Women in rural areas take an infusion or decoction to induce menstruation.

#### LYTHRACEAE

**Cuphea ciliata** R. et P. syst. (1798) 120.  
(yerba de la culebra)

The natives employ a decoction and infusion of this plant to relieve weariness and fatigue.

#### UMBELLIFERAE

**Hydrocotyle umbellata** L. Sp. Pl. (1753) 234.  
**Hydrocotyle vulgaris** L. Sp. Pl. (1753) 234.  
(oreja de abad, petacones)

The juices of both species are said to cure ulcers of the mouth. When applied to an infected pimple, they bring it to a head and heal it.

#### MYRTACEAE

**Psidium nitidum** Wright in Sauv. Fl. Cuba (1873) 44.

[This plant perhaps represents a species of *Acca*.]

(aka, acka)

The leaves are aromatic and are employed in warm baths for the relief of rheumatic and “nervous pains.”

**Psidium pyriferum** L. Sp. Pl., Ed. 2 (1762) 672.

(Cited in the Relación as *Psidium pyriferum*.)

[*Psidium Guajava* L. Sp. Pl. (1753) 470.]

(sahuintu, huayabo)

The leaves and fruits possess styptic properties. Some people chew the leaves “to comfort and strengthen the teeth.”

#### MELASTOMACEAE

**Melastoma repens** Desr. in Lam. Encycl. 4 (1796) 54.

(clacla)

This plant, mixed with sundry others, provides a yellow dye.

**Melastoma tomentosa** Rich. in Act. Soc. Hist. Nat. Paris 1 (1792) 109.

[*Miconia tomentosa* (Rich.) D. Don in Mem. Wern. Soc. 4 (1823) 316.]

(tiriblanco)

Womenfolk make a yellow dye from this shrub, varying the shade by adding other plants.

**Rhexia hispida** Rich. in Act. Soc. Hist. Nat. Paris 1 (1792) 108.

(chachiquis)

This species of *Rhexia* is the source of a yellow dyestuff.

**Rhexia repens** *nom. nud.*

(olaola)

Mixed with other plants, this species provides a yellow dye.

#### OENOTHERACEAE

**Fuchsia violacea** *nom. nud.*

(th'ilco)

The wood yields a black dye. An infusion or decoction is believed to soothe the fevers of typhoid.

#### GUNNERACEAE

**Gunnera thyriflora** *nom. nud.*

(panke; panque)



The root is employed in tanning and to dye leather black. The mucilage from the tender stems and fresh shoots is applied to the kidneys "to lower the temperature of the blood" in severe fevers. The decoction and powder of the root are believed to be good astringents and have various therapeutic uses.

#### CYNOMORIACEAE

**Cynomorium placentiforme** *nom. nud.*

(hatún puñuchrin)

Indians eat the large red aments to restore energies spent on long walks and from hard physical labour. The cold infusion is drunk for the same purpose.

#### UMBELLIFERAE

**Anethum parvum** *nom. nud.*

(eneldo cimarrón)

The natives employ this plant medicinally in place of dill.

**Apium graveolens** L. Sp. Pl. (1753) 264.

(panúl; apio silvestre)

The natives of Chile eat the leaves green to stop hemorrhages of the mouth and to cure pulmonary troubles.

#### ERICACEAE

**Arbutus parviflora** *nom. nud.*

(macha)

The ripe fruits, though tasty and sweet, are intoxicating when eaten in excessive amounts.

**Thibaudia** (?)

(machamacha)

The fruits bring on a drunkenness, if too many be eaten. The inebriation is especially severe in children.

#### SAPOTACEAE

**Sideroxylon pendulum** *nom. nud.*

(pumachilca)

The leaves and especially the young shoots are covered with a resin which has soothing properties. The crushed leaves and shoots are applied to bruises and contusions for relief of pain.

#### LOGANIACEAE

**Buddleia incana** R. et P. Fl. Peruv. 1 (1798) 52, t. 80, fig. b.  
(Cited in the *Relación* as *Buddeja incana*.)  
(quisoar, quishuara, colle)

Indians use an infusion of the terminal branches "to expel viscose and cold humours." Crushed, mixed with urine and heated over a fire, the same part of the plant is used as a cataplasm to relieve aching molars; it is applied internally and externally. Some people employ the buds to colour food.

#### GENTIANACEAE

**Hoppea tinctoria** *nom. nud.*

The leaves dye woollen, cotton and linen goods a beautiful canary yellows.

#### ASCLEPIADACEAE

**Cynanchum leucanthum** Jacq. ex. J. F. Gmel. syst. (1796) 442.  
[*Sarcostemma Jacquinii* Decne. in DC. Prodr. 8 (1844) 542.]  
(piochas)

The latex is said to have strong laxative properties.

#### CONVOLVULACEAE

**Convolvulus secundus** R. et P. Fl. Peruv. 2 (1799) 10, t. 117.  
[*Jacquemontia unilateralis* (Roem. et Schult.) O'Donnell in Lilloa 23 (1950) 470.]

**Convolvulus sepium** L. Sp. Pl. (1753) 153.  
[*Calystegia sepium* (L.) R. Br. Prodr. (1810) 483.]  
(campanillas de lomas)

The roots of both species, in infusion, are employed by the Indians as a purgative.

**Evolvulus stipulatus** *nom. nud.*  
(tina; membrillo)

An infusion of the leaves is valued in treating jaundice.

**Ipomoea Papiro** R. et P. Fl. Peruv. 2 (1799) 11, t. 120, fig. a.  
[*Ipomoea pubescens* Lam. Illustr. 1 (1791) 465, no. 2123.]

**Ipomoea subtriloba** R. et P. Fl. Peruv. 2 (1799) 12.  
[*Ipomoea pubescens* Lam. Illustr. 1 (1791) 465, no. 2123.]  
(papyru)

The tuberous root is highly prized as a purgative, administered as an infusion. Only from one quarter to two drachmas (fresh) or forty-eight drachmas (dry) need be employed.

**Mirabilis Jalapa** L. Sp. Pl. (1753) 177.

(trompetillas; flor de Panamá)

A decoction of the roots has mild laxative properties.

#### POLEMONIACEAE

**Periphragmos foetidus** R. et P. Fl. Peruv. 2 (1799) 17.

[*Cantua pyrifolia* Juss. in Ann. Mus. Paris 3 (1804) 117.]

(huevill-huevill)

The Chileans use an infusion in clysters as a laxative.

**Periphragmos uniflorus** R. et P. Fl. Peruv. 2 (1799) 18.

[*Cantua ovata* Cav. Icon. 4 (1797) 43.]

(ccantu)

The uncivilized Indians esteem this shrub as a magical plant in their superstitious practices.

#### VERBENACEAE

**Lantana salvifolia** Jacq. Hort. Schoenb. 3 (1798) 18, t. 285.

(mastrante)

Peruvian natives employ an infusion or a boiled potage to cure jaundice, drinking one or the other preparation in large amounts.

**Verbena corymbosa** R. et P. Fl. Peruv. 1 (1798) 22, t. 33.

**Verbena multifida** R. et P. Fl. Peruv. 1 (1798) 21.

(sandialaguén)

A decoction is taken in Chile to stimulate menstruation and to alleviate a condition which causes a burning sensation during urination.

#### BORAGINACEAE

**Lithospermum tinctorium** R. et P. Fl. Peruv. 2 (1799) 4, t. 114.

[*Plagiobothrys myosotoides* (Lehm.) Brand. in Pflanzenr. iv. 252 (1931) 108.]

The specific epithet refers to the custom of having horses tread upon the plant in order to prepare from it a blue dye.

#### LABIATAE

**Gardoquia canescens** *nom. nud.*

**Garadoquia conferta** *nom. nud.*

(socconche, suyumpay, chinchi)

An infusion of this highly fragrant plant is frequently used to "relieve melancholies", for pains in the side and for nervous breakdowns. It is taken mixed with wine or with water or spirits.

**Nepeta** sp.

(muña; ccoa)

The natives utilize a salt water decoction to treat dropsical and gouty swellings and for liver complaints. It is valued also to assuage headaches. The warm infusion is taken as an appetitive and diuretic, to cure severe cholera and "melancholy", to cleanse the spleen and reduce oppilations.

**Salvia fragrantissima** *nom. nud.*

**Salvia plumosa** R. et P. Fl. peruv. 1 (1798) 26, t. 37.

(chenchelcoma; salvia real)

Indians occasionally eat the leaves as a vermifuge and attribute to them pectoral and antiasthmatic properties. They believe that they are capable of making sterile women fecund. The plant is frequently employed as an appetitive, diuretic, vulnerary, detergent and tonic to build up the appetite.

NOLANACEAE

**Nolana acutangula** *nom. nud.*

(chaves)

This plant is considered an excellent feed for chickens.

SOLANACEAE

**Cestrum virgatum** R. et P. Fl. Peruv. 2 (1799) 27.

[*Cestrum Parqui* L'Herit. Stirp. Nov. (1784) 73.]

(palqui; parqui)

Chilean natives employ a decoction or infusion in treating intermittent fevers; an infusion of the inner bark is drunk in fast periods to cure stomach ills. The berries yield a purplish blue dye.

**Datura sanguinea** R. et P. Fl. Peruv. 2 (1799) 15.

[*Brugmansia sanguinea* (R. et P.) D. Don in Sweet Brit. Fl. Gard. 2 (1835) 272.]

(puca-campanilla; floripondio encarnado)

The leaves are used as emollients and anodynes either in the form of cataplasms or when simply applied single and entire. The

seeds are narcotic, dulling the senses and understanding, and they are occasionally administered with evil intent as a powder in food. Some natives assert that there are those who have gone mad merely by lying down to sleep in the shade of these trees.

**Datura Stramonium** L. Sp. Pl. (1753) 179.

(tonco-tonco; chamico)

This plant is known in Peru as chamico because of the criminal use that the Indians are accustomed to make of it: to intoxicate each other when they feel that they have been wronged or when they are overtaken by jealousy in their love affairs. This practice has given rise to the common Peruvian adage: “Está chamicado fulano o fulana.” (So-and- is under the influence of chamico.) —applied whenever a person is either pensive, taciturn, absent-minded or else too tipsy from drink or from other causes. Whilst Ruiz and his group were in Huánuco, a boy of ten gave a schoolmate of his own age powdered seeds of chamico in bread. Within a few hours, it began to exercise its narcotic effects, as though the boy had taken wine. Dombey (the French botanist accompanying Ruiz) was called in by the boy’s parents to administer a remedy; but, notwithstanding the emetics and other medicines that Dombey prescribed, the boy was rendered permanently stupid and silly. Before the poisoning, he had been intelligent, keen, mischievous and full of fun in boyhood games, but his former personality was lost forever.

The natives apply the crushed leaves and seeds in a poultice to treat piles, and the effects are excellent. Some people are accustomed to drink an infusion of a few leaves to relieve pains in urinating and irritations of the skin caused by bitter and strong purgatives. The use of the crushed leaves, mixed with vinegar, is frequently made as a poultice for the spine or kidneys, in order to lower fevers and to lessen rheumatic pains and reduce the swelling of hernias.

**Fabiana imbricata** R. et P. Fl. Peruv. 2 (1799) 12, t. 122.

(pichi)

Plentiful on sandy banks of estuaries and rivers, this plant is believed to possess wondrous anthelmintic properties for curing sheep and goats of pirguín, an ailment that wipes out whole flocks. This is why farmers take affected animals to pastures

where pichi abounds. With this fodder, the animals recover and fatten up in a few days.

**Solanum crispum** R. et P. Fl. Peruv. 2 (1799) 31, t. 158.  
(natre)

According to the natives, an infusion can be used successfully in treating chavalongo, a kind of typhoid fever.

**Solanum nitidum** R. et P. Fl. Peruv. 2 (1799) 33, t. 163.

**Solanum nutans** R. et P. Fl. Peruv. 2 (1799) 34, t. 166.

**Solanum oblongum** R. et P. Fl. Peruv. 2 (1799) 24, t. 165, fig. b.

**Solanum stellatum** R. et P. Fl. Peruv. 2 (1799) 40, t. 176, fig. b.

[*Solanum hispidum* Pers. Syn. 1 (1815) 228.]

(campucassa; huircacassa)

The partially toasted leaves have the property of drawing out splinters from any part of the flesh and of helping to suppurate infected ulcers, according to native belief. Another folk-lore belief holds that the spines of *Solanum stellatum* produce blisters full of lymph, if they penetrate the flesh. This lymph turns to pus, but the blisters break open and are cured by applying the partially roasted leaves of the same plant to the affected areas.

**Solanum pubescens** R. et P. Fl. Peruv. 2 (1799) 36.

*S. incanum* R. et P. Fl. Peruv. 2 (1799) 40.

(yuruhuacta)

The natives of Peru apply the leaves upside down to bring ulcers and sores to a head. When applied under side down, the leaves are believed also to heal sores.

**Solanum variegatum** R. et P. Fl. Peruv. 2 (1799) 32, t. 162a.

[*Solanum muricatum* Ait. Hort. Kew, ed. 1, 1 (1789) 250.]

(pepino de la tierra; pepino del país)

When eaten in excess, the fruits cause tertian fevers and bloody stools and are harmful to those suffering from amoebas and dysentery.

#### BIGNONIACEAE

**Jacaranda caerulea** (Juss.) Griseb. Fl. Br. W. Ind. 1 (1861) 446.

(yarabisco)

The natives often use the bark of this tree to prepare anti-venereal and anti-rheumatic decoctions. The wood is employed in the preparation of cups for holding water which they are wont to

drink in great quantities; they are persuaded that this water has the same virtues as a decoction and infusion of the bark. The powdered leaves are excellent for healing ulcers, once the ulcers have been cleansed.

#### COLUMELLIACEAE

**Columellia corymbosa** *nom. nud.*

The leaves are intensely bitter and are “wonderfully efficacious” in treating intermittent fevers, according to Indian belief.

**Columellia ovalis** *nom. nud.*

(ollus; ulux)

This excessively bitter shrub serves as an admirable febrifuge when taken in either a cold or warm infusion.

#### VALERIANACEAE

**Valeriana connata** R. et P. Fl. Peruv. 1 (1798) 39, t. 67.

**Valeriana globiflora** R. et P. Fl. Peruv. 1 (1798) 43, t. 65.

**Valeriana interrupta** R. et P. Fl. Peruv. 1 (1798) 42, t. 67.

**Valeriana lanceolata** *nom. nud.*

**Valeriana pilosa** R. et P. Fl. Peruv. 1 (1798) 39, t. 66.

**Valeriana oblongifolia** R. et R. Fl. Peruv. 1 (1798) 40, t. 65.

**Valeriana rigida** R. et R. LF. Peruv. 1 (1798) 39, t. 65.

**Valeriana thyrsoflora** *nom. nud.*

(huarituru)

The natives apply the crushed roots of all of these species of *Valeriana* in the form of a cataplasm to set bones.

**Valeriana decussata** Bonp. ex Wedd. Chlor. And. 2 (1857) 19.

**Valeriana paniculata** R. et P. Fl. Peruv. 1 (1798) 41, t. 70. fig. a.  
(macae)

The root may be employed medicinally in place of official *Valeriana*.

**Valeriana pinnatifida** R. et P. Fl. Peruv. 1 (1798) 40, t. 69.

(albergilla)

Mal de maico — stinging sores and rashes on the legs and other exposed parts of the body — is caused, according to the natives, by species of *Schinus*, even by the shade of the trees. It can be cured with albergilla of Spain. The albergilla is roasted in handfuls in the embers and applied as hot as can be stood to the

sores. This treatment is said to affect a cure within eight or ten days.

#### CAMPANULACEAE

**Lobelia decurrens** Cav. Icon. 6 (1801) 13, t. 521.

(contoya)

The natives use an infusion of this plant as a strong laxative. To halt its drastic action, they drink two cups of cold water.

#### COMPOSITAE

**Achillea urens** *nom. nud.*

**Achillea lutea** *nom. nud.*

(botoncillo)

This plant is poisonous to guinea pigs.

**Anthemis pallescens** (Boiss) Heldr. ex Nym. Consp. 2 (1879) 359, *in synonym.*

(Cited in the Relación as *Anthemis pallescens.*)

[*Anthemis tinctoria* L. Sp. Pl. (1753) 896.]

The roots are peppery and promote salivation. "The stimulation and acrimony of the tongue last for more than six hours."

**Coreopsis** sp.

**Cosmos** sp.

(pahuán)

"In six pints of water, cook four ounces of pahuán until the dye is well extracted. Then put in the wool soaked in alum solution and boil it together again. The dye will be orange."

**Eupatorium** sp.

(chilca macho)

"Take twigs of chilca macho and boil them in water together with indigo and urine. Woollens and cottons take on a greenish hue."

**Eupatorium aromaticum** L. Sp. Pl. (1753) 839.

(chilca)

This plant is the source of a green and a yellow dye. The crushed leaves are used to clean and heal ulcers. They are also applied to alleviate pains due to sprains and contusions.

**Gnaphalium trinerve** DC. Prodr. 6 (1838) 236.



**Gnaphalium Viravira** Mol. Sagg. Chil. (1782) 149. 354.  
(viravira)

When crushed and applied as a cataplasm to contusions or ruptures, these plants are said to be very effective in “strengthening and curing the sore parts of the body.”

**Molina caespitosa** R. et P. Syst. (1798) 206.

[*Baccharis caespitosa* (R. et P.) Pers. Syn. 2 (1807) 425.]

**Molina obovata** R. et P. Syst. (1798) 206.

[*Baccharis obovata* (R. et P.) DC. Prodr. 5 (1836) 408.]

**Molina uniflora** R. et P. Syst. (1798) 207.

[*Baccharis glutinosa* Pers. Syn. 2 (1807) 425.]

(taya hembra)

The crushed leaves are applied to sprains and contusions.

**Molina concava** R. et P. Syst. (1798) 203.

[*Baccharis concava* Pers. Syn. 2 (1807) 425.]

**Molina linearis** Less. in Linnaea 6 (1831) 139, 505.

[*Baccharis serrulata* Pers. Syn. 2 (1807) 423.]

(romerillo)

“When crushed and applied to ruptures and bruises, the leaves strengthen and aid the wounded parts.”

**Molina corymbosa** R. et P. Syst. (1798) 210.

[*Baccharis corymbosa* (R. et P.) Pers. Syn. 2 (1807) 424.]

**Molina incana** R. et P. Syst. (1798) 211.

[*Baccharis thyoides* (R. et P.) Pers. Syn. 2 (1807) 425.]

**Molina nitida** R. et P. Syst. (1798) 204.

[*Baccharis nitida* (R. et P.) Pers. Syn. 2 (1807) 425.]

**Molina prostrata** R. et P. Syst. (1798) 204.

[*Baccharis prostrata* (R. et P.) Pers. Syn. 2 (1807) 424.]

**Molina salicifolia** R. et P. Syst. (1798) 210.

[*Baccharis salicifolia* (R. et P.) Pers. Syn. 2 (1807) 425.]

All of these species are resinous shrubs, balsamic, aromatic and tonic.

**Molina emarginata** R. et P. Syst. (1798) 202.

[*Baccharis emarginata* (R. et P.) Pers. Syn. 2 (1807) 424.]

(tayo macho)

Sprains and contusions are treated with this plant.

**Molina scabra** R. et P. Syst. (1798) 210.

[*Baccharis scabra* (R. et P.) Pers. Syn. 2 (1807) 424.]

(taya)

Women apply this plant crushed as one of the best remedies to strengthen sprains and contusions.

**Molina scandens** R. et P. Syst. (1798) 205.

[*Baccharis scandens* (R. et P.) Pers. Syn. 2 (1807) 424.]

(chilca)

The abundant resin of this scandent shrub is balsamic and corroborative.

**Pectis trifida** *nom. nud.*

(asccapichana; escoba amarga; escoba cimarrona; canchalagua cimarrona)

This plant is an excellent febrifuge and stomachic, according to native belief. The natives use an infusion of it to cure malarial fevers.

**Polymnia resinifera** *nom. nud.*

(puhe; taraca)

The natives employ the resin extensively to set broken bones and for neuralgias. It is applied in the form of plasters.

**Santolina tinctoria** Mol. Sagg. Chil. (1782) 142.

[*Cephalophora glauca* Cav. Icon. 6 (1801) 80, t. 599.]

(poquíl)

This plant is the source of a beautiful and fast yellow dye.

**Scorzonera ciliata** Forsk. Fl. Aegypt. Arab. (1775) 143.

[*Picridium tingitanum* Desf. Fl. Atlant. 2 (1799) 220.]

**Scorzonera peruviana** *nom. nud.*

These are the species of “viper grass” officially named in the Peruvian pharmacopoeia of the 18th Century.

**Solidago secunda** Sessé et Moç. Fl. Mex., Ed. 2 (1894) 188.

(bullel)

*Solidago secunda* yields a yellow dye.

**Triptilion spinosum** R. et P. Syst. (1798)k 185.

(Cited in the *Relación* as *Triptilion spinosa*)

(siempre viva)

With a reputation of excellent diuretic properties, this species is extensively used in treating urinary ailments.

**Vermifuga corymbosa** R. et P. Syst. (1798) 216.

[*Flaveria Contrayerba* Pers. syn. 2 (1807) 489.]

(chenapoya; contrayerba; matagusanos)

Employed extensively in Peru, this plant is applied as a poultice to maggot-infested sores and to wounds of beasts. When pounded up with salt, it is more efficaceous in killing maggots in animals than when used alone.

PLATE 4



HIPÓLITO RUIZ  
1754-1816